A NEW SPECIES OF *JATROPHA* (EUPHORBIACEAE) FROM COASTAL JALISCO, MEXICO

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ABSTRACT

Jatropha bullockii from Jalisco, México, is described and illustrated and its relationships are discussed. The species is assigned to sect. *Platyphyllae* and appears most closely related to *J. moranii*.

Tropical deciduous forest dominates the Pacific slope of Mesoamerica. Knowledge of the flora from locally intensive studies is still sparse, but a florula is in preparation for a 1600-ha reserve in coastal Jalisco, the Estación de Biología Chamela. In the course of this project it has become clear that Leguminosae and Euphorbiaceae are the most species-rich families in the area. Particularly in the latter several species new to science have been found (e.g., Pérez Jiménez 1982), one of which is described here.

Jatropha bullockii E. J. Lott, sp. nov.

Sect. *Platyphyllae*; a *J. moranii* foliis eglandulosis glabris, corolla intus pilosa, petalis albis vel roseis, staminibus 8 (nec 10) differt (Fig. 1).

Shrub 0.5–3 m tall, branches erect to sprawling, young branches flexible. Bark pale grayish-brown, fissured, thin, easily peeled (not exfoliating), latex clear, becoming reddish, bright red on drying, younger branches and growing tips densely white-puberulent with straight hairs 0.1–0.2 mm long, older branches glabrescent, short shoots sometimes present. Leaves alternate, broadly obovate to usually palmately 3–5-lobed, the lobes and apex occasionally terminating in a tooth ca. 0.2 mm long, margins entire (glands lacking), blades shiny above, paler beneath, glabrous or with a few scattered hairs on midvein near base on upper surface, covered with a fine whitish cuticle when very young, 2–4.5 cm long, 2–4 cm wide, palmatinerved with 5 main veins, the 2 laterals sometimes less prominent, base cordate, apex acute; petioles slender, 1–4 cm long, often bearing remnants of a transparent cuticular covering, especially near the base, stipules absent, axils villous with reddish hairs 0.3–0.5 mm long. Plants monoecious; inflorescence mixed, subterminal, lateral, or on short shoots, very reduced, subsessile to pe-

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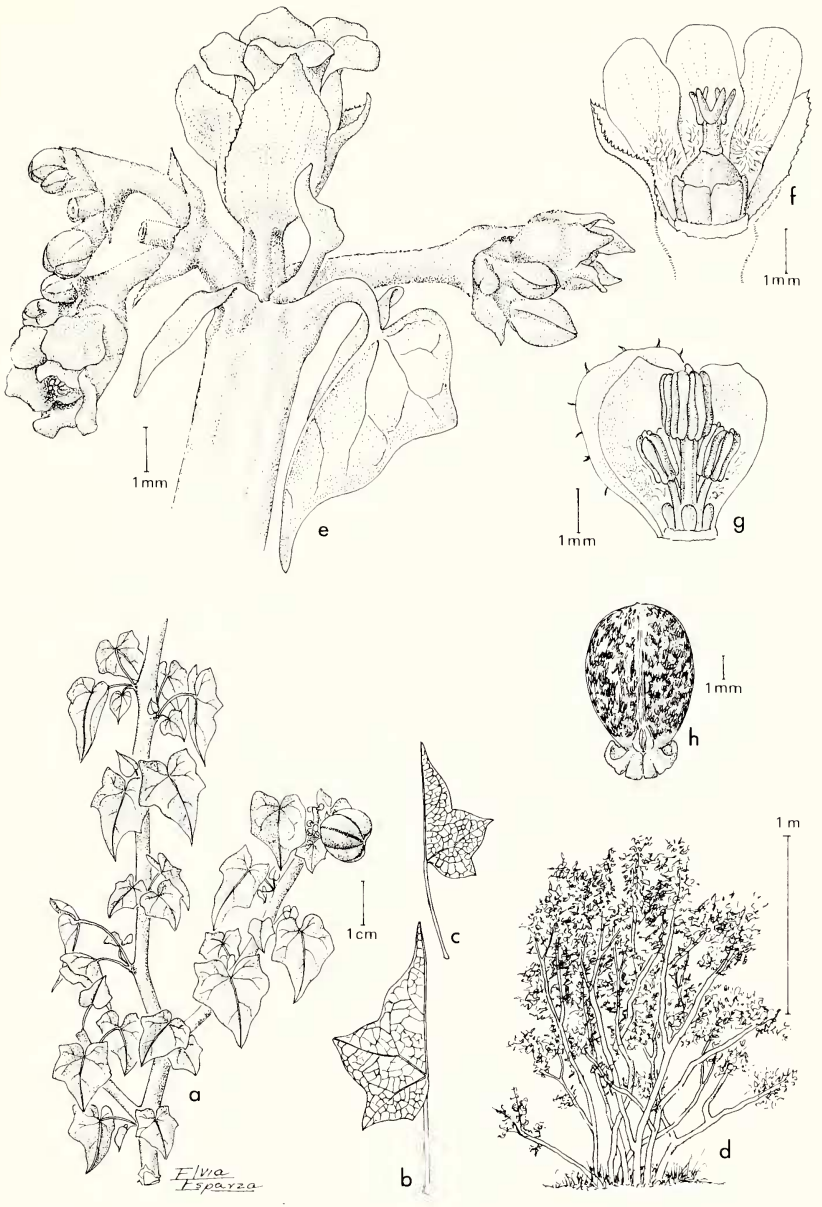

FIG. 1. *Jatropha bullockii.* a. Branch with leaves, inflorescence and fruit. b–c. Detail of leaf venation and shape. d. Growth habit. e. Inflorescence. f. Detail of the pistillate flower. g. Detail of the staminate flower. h. Seed.

dunculate, peduncles 1–20 mm long, densely white-puberulent, bracts of the inflorescence (1–)2–8 mm long, 1–1.5 mm wide, lance-linear to lance-ovate. Staminate flowers: sessile in compound dichasia; bracts lance-ovate, ciliate (not glandular), green or reddish, acute to acuminate, 0.8–2 mm long, 0.5–0.8 mm wide; calyx 1.5–2 mm long, often reddish, lobes 5, rounded, ciliate, 1–1.3 mm long, 1–1.5 mm wide, imbricate; corolla cream-white to pink, campanulate, 3–3.5 mm long, lobes (1.5–)2–2.5 mm long, 1–1.3 mm wide, recurved at anthesis, glabrous without, tube densely white-pilose within; disc glands 5, reddish, oblong, smooth, glabrous, 0.8–1 mm long, very conspicuous; stamens 8, monadelphous, biseriate, total staminal column ca. 3 mm tall, outer (lower) 5 stamens with filaments free ca. ½ their length, free portion 0.6 mm long, inner (upper) 3 stamens with filaments fused, 1.3 mm long, anthers 0.7–0.8 mm long, glandular-mucronate at tip of connective. Pistillate flowers: larger than staminate, single and terminal but much surpassed by male branches; pedicel stout, 0.5–2 mm long, 1.5–2 mm wide, to 8 mm long in fruit, densely white-puberulent; calyx 3–5 mm long, glabrous, more or less foliaceous, lobes 5, imbricate, ovate-lanceolate, acute, erect, green to reddish, 2–4(–4.5) mm long, 2 mm wide, ciliate; corolla campanulate, cream to pink, 3.5–4.3 mm long, 2.5 mm broad at base, fused ca. ½ its length, lobes 1.8–2.5 mm long, 2 mm wide, recurved at anthesis, glabrous without, pilose within proximally; disc lobes 5, green to purplish-red, rectangular, 0.5 mm long, 0.5–0.8 mm wide; ovary trilocular, conspicuously 3-lobate, 1.2 mm tall, smooth, glabrous; styles 3, fused, 0.5–0.6 mm long, bifid, glabrous, stigma lobes 0.7 mm long, narrow, glabrous. Capsule 3-locular, yellow-brown, 3-lobed, abruptly angled when immature, the lobes somewhat rounded on drying, 9 mm long, 9 mm broad, verruculose. Seeds 3, golden to brown with reddish-brown mottling, oblong-elliptic, 8 mm long, 5–6 mm broad, caruncle yellow, lacerate, 2–3 mm long, 2.4–4 mm wide.

TYPE: Mexico. JALISCO. Mpio. La Huerta: Estación de Biología Chamela (UNAM), 19°30′N, 105°03′W, Cerro El Colorado, El Mirador, Selva Baja Caducifolia con *Plumeria rubra, Amphipterygium, Bursera excelsa, Comocladia engleriana, Manihot chlorosticta, Hechtia, Agave,* etc., en suelos anaranjados derivados de roca metamórfica, 12 Sep 1983, *E. J. Lott 1863* (Holotype: MEXU; isotypes: CAS, ENCB, F, MICH, MO, US).

PARATYPES: Mexico. JALISCO. Mpio. La Huerta: same locality as type, 12 Jun 1982, *S. H. Bullock 1174 and 1175* (MEXU); 5 Dec 1982, *E. J. Lott and T. Wendt 1621* (MEXU); 6 Aug 1982, *E. J. Lott 1789* (MEXU); 1 Jul 1982, *E. J. Lott and O. Téllez V. 1140* (MEXU); 29 May 1982, *E. J. Lott 1088* (MEXU); 14 Dec 1976, *J. A. Solís Magallanes 414* (MEXU); Cerro de la Punta de la Virgen, Rancho El Milagro, en acantilado, 29 Oct 1971, *L. A. Pérez J. 532*

(MEXU); Rancho El Paraíso, a ca. 4 km al se. de la Estación de Biología Chamela, 24 Aug 1982, *E. J. Lott and J. A. Solís Magallanes 1219* (MEXU); same locality, 28 Oct 1981, *E. J. Lott and J. A. Solís Magallanes 646*.

Range. Known only from the Estación de Biología Chamela and surrounding area.

Habitat. On rocky prominences from near sea level to ca. 150–200 m, in tropical deciduous forest with *Thevetia ovata, Euphorbia schlechtendalii, Gossypium aridum, Croton* spp., and the species mentioned in the type citation.

Jatropha bullockii belongs to sect. *Platyphyllae* Dehgan & Webster [Subgenus *Curcas* (Adans.) Pax] by virtue of its 3–5-lobed petiolate leaves, relatively large, foliaceous calyx lobes in the female flower, monoecious inflorescences, 3 bifid stigmas, and trilocular fruits. It lacks the typically either glandular-margined, peltate, or cordate and tomentulose leaves of the section, although in some members of the section the leaves are glandular only in the seedling (Dehgan and Webster 1979). The seedlings are as yet unknown in *J. bullockii*. It further differs in its 8 stamens and ecarinate mature capsules, although the immature capsules are somewhat abruptly angled.

Of the species of sect. *Platyphyllae* whose characteristics are well known, *J. bullockii* seems most closely related to *J. moranii* Dehgan & Webster from the Cape region of Baja California. *Jatropha bullockii* differs from *J. moranii* in its larger habit, eglandular leaves with only occasional scattered hairs near the base, corolla tube pilose within, pale pink petals, and 8 stamens. The two species have in common estipulate, 5-lobate leaves, eglandular bracts, and entire, eglandular sepals that are more or less foliaceous in the female flower (Dehgan and Webster 1978).

Another species apparently related to *J. bullockii* is *J. fremontioides* Standl., a poorly-known species of the Isthmus of Tehuantepec. Dehgan and Webster (1979) placed the latter in sect. *Neopauciflorae,* characterized by bilocular fruits, short or stout petioles, and conspicuous, dissected stipules. However, according to the type description (Standley 1940), *J. fremontioides* has trilocular fruits, as do the collections of this species at MEXU (*Matuda 2203, R. M. King 212*). The two species have in common petiolate, eglandular leaves, stipules absent or not evident, monoecious, much-reduced inflorescences with sessile staminate flowers, corolla pilose within, biseriate stamens and trilocular fruits. *Jatropha bullockii* differs from *J. fremontioides* in its glabrous, more acute leaves, longer petioles, and 8 stamens. Dehgan and Webster (1979, p. 20) note that *J. fremontioides* "is monoecious, but inflorescences occur as short, subsessile groups of flowers in the leaf axils with no clear distinction between the exact location of pistillate or staminate flowers." Be-

cause the inflorescence structure is important in determining relationships in *Jatropha,* I hesitate to state that *J. bullockii* is more closely related to *J. fremontioides* until better material of the latter is available. *Jatropha fremontioides* might best be accommodated in sect. *Platyphyllae* with *J. bullockii* and *J. moranii* upon further study.

It is a pleasure to dedicate this new species to Dr. Stephen H. Bullock, research scientist at Estación de Biología Chamela, for his contributions toward the understanding of the flora of Chamela, particularly its plant reproductive biology.

Acknowledgments

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